Ceramic Coating Test Results
University of Nevada

The University of Nevada, Las Vegas, under the direction of the Mechanical Engineering Department, has developed the Arid Regions Environmental Laboratory (AREL) to test new technologies that help in saving on energy demand.

The facility consists of two identically constructed rooms, which are identically oriented with respect to the sun. The facility is equipped with a heating and cooling system, digital readout watt meters, several sensors for measuring indoor surface temperatures and instantaneous heat flows, local wind speed and directions as well as the total intensity of sunlight received on horizontal surface.

All these data are collected at regular time intervals using a computer data acquisition system. These data are stored in the system for long term data analysis of trends as well as for comparative purposes between it and computer model simulations.

The first technology that was tested was ceramic base paint.
The testing period was between the months of June - September 1994.
Two identical chambers were constructed and coated, on one chamber the coating was fortified with **ceramic insulating microspheres.** (as in the Therma Guard product)

The results showed the chamber that was painted with the regular outdoor paint showed a significant increase in energy usage compared to the chamber painted with the ceramic paint.

MONTH	PAINT	Ceramic	% DIFF
JUNE	167.99	117.21	43.32
JULY	101.81	69.68	46.11
AUGUST	175.72	109.72	60.15
SEPTEMBER	63.16	39.55	59.69
TOTALS >	508.68 Watts	336.16 Watts	**51.32**

Rohm & Haas Chemical, a major supplier of resins for the paint and coating industry, participated in a cooperative research project with the University of Southern Mississippi and Mississippi Power Company to quantify the effects of white reflective acrylic roof coatings when applied to actual full scale roofs.

Three similar buildings, 2 of similar design using construction techniques and insulation guidelines prevalent in the 1970's. The third building was constructed using revised and upgraded installation guidelines from the 1980's, consistent with the "Good Cents" program espoused by the Mississippi Power Company.

After one year of continuous monitoring, the elastomeric coated building had 21.9% lower energy consumption in the summer than the control building. The white coating also reduced the energy demand by 3.99% in the winter.

Society For Advancement Material Process Engineering SAMPE
WE SELL ENERGY STAR
BBB
The American Ceramic Society Member
U.S. GREEN BUILDING COUNCIL
SPINOFF Commercialized NASA Technology